Seasons and Biomes Questionnaire

Welcome to the Seasons and Biomes project. We are a dedicated team of scientists and educators looking forward to working with you. This project will contribute critically needed science measurements to validate satellite data. These measurements are important for regional climate change research, prevention and management of diseases, and to better understand the water and carbon cycles. By monitoring the seasons in your biome, you will learn how interactions within the Earth system affect your local environment and how in turn your local environments affect regional and global environments. A biome is a large geographic area of distinctive plant and animal groups that are adapted specifically for a particular environment. Biome type is determined by the climate and geography of a region (See page 3 for a description of each land biome). To get started we ask you to complete the short questionnaire below. The information from this questionnaire will be used to help us plan upcoming field campaigns for your biome. Additionally, this information will help your school get started (or continue) the GLOBE phenology investigations. Don't worry if you can't answer all the questions, but please make sure to provide your contact information at the bottom so we can let you know about our future events. Thank you!

Tell us about your seasons and biome at your school.

1) Site Location

Latitude:
Longitude:
Elevation:
What position is your site on the landscape? (please underline)

a. top of hill
b. side of the hill
c. bottom of hill
d. flat area
e. by lake
f. by pond
g. by river
h. by stream

Is your site on a slope?

If yes, what is the angle (degrees) and what is the aspect (cardinal direction)?

Are there mountains at or near your site?
If yes, what is the mean elevation of the mountains (underline)? Use topographic maps if needed.

a. Less than 1000 meters
b. Between 1000 to 1500 meters
c. Between 1500 to 3000 meters
d. Greater than 3000 meters

2) Climate

How many distinct seasons do you have at your site and describe each?

Contact your town or region's local weather station to help you answer the following questions. US schools may also find information about their climate at these websites: http://www.wunderground.com/; http://www.nws.noaa.gov/

What is your site's average annual temperature (Celsius)?

What are your site's average annual high and low temperatures (Celsius)?

What are your site's average annual high and low temperatures in winter or cold season?

What is your site's mean annual total precipitation (mm)?

In what month does most of the precipitation fall?

If you have snow at your site, what is the average annual total of snow (mm)?

If ponds/lakes/streams/rivers freeze during winter, how many days do they remain ice-covered?

3) Vegetation
Describe the dominant land cover (grasslands, forest, shrubs, desert, agricultural, lawn, buildings, roads) at your site.

If your site is forested are the dominant trees broadleafed or needle leafed?

List the MUC (Modified UNESCO Classification) classification for your site if you know it.

4) Soil
Describe the soil at the surface at your site (color, texture, structure, moisture content, organics, and any other interesting things you find).

If you can dig deeper, describe the soil below the surface layer and deeper.

What is the dominant biome of your site (underline)? See Page 3 for description of each.

Tundra, Taiga/Boreal Forest, Temperate Deciduous Forest, Temperate Rainforest, Tropical Rainforest, Temperate Grassland (Steppes/Pampas), Tropical Grassland (Savannah), Scrubland (Chaparral), Hot Deserts, Cold Deserts, Urban, Agricultural Land.

Please provide any other information about your site as well as your contact information.

School Name and Contact Person:
City and Country:
Contact Information (email):

Land Biomes

Alpine – Alpine biomes are found in mountain regions at altitudes greater than 3000 meters with winter temperatures below 0º C and summer temperatures between 10 to 15º C.
Examples: Andes, Rockies, and Himalayan mountains.

Tundra – Tundra biomes are found at latitudes of 55 to 75º with most found in the Northern Hemisphere. Tundra biomes have: permanently frozen soil at depths of 25 to 100 centimeter; predominately lichens, mosses, and other low growing plants; and mean annual temperatures of 28º C. In summers, the sun shines almost continuously and temperatures range from 3 to 16º C. *Examples: Antarctica, Canada, Finland, Iceland, Norway, USA*

Taiga or Boreal Forest – Taiga biomes are found between 50º N and the Arctic Circle. Predominate vegetation is needle-leaf trees (e.g. pines, spruce) and temperatures are below freezing for six months out of the year. Winters are snowy and cold (-54º to –1º C) and summers are rainy, humid and warm (–7 to 21º C). Annual precipitation ranges from 300 to 850 mm. *Examples: Canada, China, Finland, Norway, Russia, Siberia, Sweden, USA*

Temperate Deciduous Forest – Temperature Deciduous Forests have four distinct seasons (spring, summer, autumn, winter) with mean annual temperatures of 10º C and precipitation from 760 to 1525 mm per year. Vegetation consists of deciduous trees (e.g. oak, beech, and maple), shrubs, short plants, mosses, and lichens. *Examples: Canada, China, Europe, Japan, Russia, USA*

Rainforest – Vegetation is dense, tall, and green with a lot of precipitation throughout the year.

Tropical Rainforest – Tropical Rainforests are found between 23.5º N and 23.5º S; have mean annual temperatures of 20 to 34º C; and high precipitation (2000-10000mm/yr). Trees are predominately broadleaf with many types of species. *Examples: Brazil, Malaysia, Philippines, Thailand, Pacific Islands, West Africa*

Temperate Rainforest – Temperate Rainforests are found along the coast in temperate regions. Precipitation is regular throughout the year (~ 2500 mm/yr). Trees are also predominately broadleaf, but there is less species diversity and temperatures are cooler. *Examples: USA, Chile, Japan, Norway, New Zealand*

Grasslands – Found between forests and deserts with less rain than forests. Vegetation is predominately grass with few trees and bushes. Grasslands are also called savannahs (Africa), steppes (Europe), and pampas (South America).

Tropical Grasslands – Found closest to the equator and are hot year round. Mean annual precipitation ranges from 600 to 1500 mm. *Examples: Australia, Cameroon, Ghana, South Africa*

Temperate Grasslands – Found farther from the equator and have hot summers and cold winters. Mean annual precipitation ranges from 250 to 750 mm. *Examples: Argentina, China, Siberia, South Africa, USA*

Shrubland/Chaparal – Shrubland biomes are found at latitudes of 30 to 50º N and 30 to 40º S and have mild winters and hot and dry summers. Temperatures range from 0 to 40º C. Annual precipitation ranges from 250 mm to 400 mm. Vegetation consists of shrubs, trees, and cacti with leaves that are small and hard to hold moisture. Terrain can be flat, rocky, or mountainous. *Examples: Australia, Chile, Croatia, South Africa, USA*

Desert – Deserts are very dry with precipitations less than 200 mm per year and little vegetation.

Hot Desert – Found at latitudes of 15 to 28º North and South of the equator. Days are very hot (40º C) and nights are cool (10º C). *Examples: Africa, Australia, USA*

Cold Desert – Found in Arctic regions and the main form of precipitation is snow. *Examples: Iceland*

Urban – Manmade biome of buildings, streets, and houses. Found in or near cities.

Agricultural land – Manmade biome of cropland for food and/or feed production.